1/19/88

ARKANSAS COMPANY SITE SAFETY PLAN
185 FOUNDRY STREET, NEWARK, NEW JERSEY

INTRODUCTION:

The Arkansas Company occupies about two acres of an old and dilapidated industrial park at 185 Foundry Street, Newark, New Jersey. This company manufactured various textile chemicals at this location from 1943 to 1983. The products included chelating agents, dye carriers, emulsifying agents, fire retardants, fungicides, finishes and water repellents.

Abandoned buildings on this site include a two-story office/laboratory building (Bldgs. 25 & 30), a machine shop (Bldg. 26), a small chemical processing building (Bldg.27), a large four story chemical process building (Bldg. 28), a boiler room/tank house (Bldgs. 16 & 16B), a storage building (Bldg. 24), and two sheds (S1 & S2). About 1500 drums, of which about 600 are empty and 15,000 small containers of chemicals exist in these buildings. In addition, there are approximately 17 aboveground storage tanks and 70 process tanks/reaction vessels.

A. KEY PERSONNEL AND HEALTH AND SAFETY PERSONNEL

The EPA On-Scene Coordinator (OSC) for the Arkansas Site is Mark Pane. The alternate OSCs are John Witkowski and George Zachos, or any other EPA employee as designated by George Zachos. The ERCS Response Manager is John Bourret. The designated site safety officer (SSO) is Eugene DiSanto of ERCS. In E. DiSanto's absence the following people will serve as alternates:

1. John Bourret
2. Mark Pane
3. Kevin McMann, Regional Safety Officer, ERCS

B. TASK SAFETY AND HEALTH RISK ANALYSIS

1. Sampling/Segregation Operations

All sampling/handling of unknown materials will be performed in level B protection using the buddy system. Periodic air monitoring will take place and communication will be maintained at all times. Samples will be stored and analzyed on-site. Sample waste will be disposed of with site waste. Downgrading of protection levels will be by OSC approval and contingent upon air monitoring and sample analysis results of all unknown materials.

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2. Lab Packing Operations

The lab packing operation to take place on site will be performed in two stages using two different levels of personal protection. ERCS will utilize a subcontractor to perform the lab packing. The first stage of the operation will be performed by ERCS in level B protection. This stage of the operation will consist of stockpiling all laboratory containers in a secure and orderly manner on shelving in building 25. The second stage is to be performed by ERCS subcontractor (Chem Waste Management) using level C protection and 5 minute escape packs within easy reach. This stage of the operation will entail the actual packing of lab containers into fiber drums. At this point, all containers will have been identified and categorized. The lab packing area will be well ventilated and have two emergency exits. In addition, ERCS will provide continuous air monitoring using monotox units, an explosimeter, photoionization detector, and radiac unit.

3. Elevator Operating Procedures

Upon recommissioning of the freight elevator in building 28, a policy established that absolutely no personnel are permitted to ride the elevator at any time. The elevator is to be used for the exclusive purpose of transporting drums and any equipment required in the cleanup of building 28. Signs reinforcing this have been posted at the elevator entrance on each of the four floors in building 28.

4. Drum Handling/Bulking Operations

Staging: There are approximately 1600 drums of which about 1000 contain material. All drums will be sampled and staged for bulking. Drum staging will be accomplished by using pallet jacks on all floors above ground. A propane powered forklift will be utilized to transfer drums on the ground floor.

After categorizing the drums of material, they will be opened and the contents will be placed into bulking chambers remotely using a drum grappler attached to a back hoe. The original drums will be crushed on site. To assure that no contaminants leave the site, the drum will be decontaminated. EPA will secure a subcontractor for the decontaminating and crushing of the empty drums.

Empty drums will be staged inside Building 24 awaiting disposal. Drums will be washed using a decontamination solution best suited for the contaminants. The use of any solvents will require an additional wash of soap and water.

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The use of flammable solvents for decontamination will be discouraged and only used as a last resort. If a flammable solvent is to be used, the Site Safety Officer will first be consulted with and will approve the use of any flammable solvent prior to its uses.

All wash liquid will be properly bulked and containerized for either treatment or disposal. Untreated wash liquids will not be discharged into sewers or drains.

After the drums have been decontaminated, they shall be moved to a staging area. The drum staging area will contain clean plastic for the now clean drums.

The drum staging area will be kept free of debris.

Bulking: The Site Supervisor and Site Safety Officer will ensure that the following procedures are used for the bulking of drum wastes:

Inspection of bulking chambers for any residual materials inside the chamber.

Use of properly rated pumps for hazardous liquids that have a safety relief valve with a splash shield.

Inspection of pump hoses, casings, fittings and gaskets for weak spots and compatibility with material being pumped.

Drum puncturing is done with non-sparking tool.

5. Asbestos Removal

The removal of asbestos from any point at this site, where direct contact is imminent, will be performed by a licensed asbestos contractor and by individuals who have received the required training and are certified to remove asbestos in the state of New Jersey. The asbestos contractor and asbestos workers will be required to present a copy of their respective license/certification.

The licensed asbestos contractor will provide a plan involving the actual methods to be utilized in the removal to the OSC. The OSC and the Site Safety Officer will review and comment on this submitted plan.

Pipe lagging and tank liners covered with asbestos will be temporarily stabilized by visqeen and duct tape. ERCS will sample for asbestos in each work area during this stabilization to ensure a non-contaminated working atmosphere.

6. Sample Analysis

The on-site laboratory will perform compatibility testing on all waste samples extracted from the building. A drum log, denoting possible waste characteristics will be maintained and reviewed by the on-site chemist. The laboratory will have proper ventilation hoods for sample testing and fire extinguishers.

7. Removal of Fire Hazards

Workers shall segregate and dispose of all combustible materials inside the exclusion zone. There will be two classifications roll-offs. One will be used for hazardous and the other for non-hazardous debris. Air monitoring using photoionization detectors, oxygen meters, air bag samples and tenex tubes will be employed.

8. Floor decontamination

Scraping of floors to remove gross residuals will be accomplished using non-sparking scrapers. Scraping will be performed in level C on the buddy system with periodic air monitoring. Communication will be available for this operation. Floor waste will be drummed and sampled for disposal. Liquid floor waste will be vacuumed into drum and sampled for disposal. Final floor decon will be conducted by a subcontractor. The subcontractor will submit a work plan for review and approval by the OSC and the site safety officer. Workers will wear level C protection. All liquid and sludge generated will be collected and disposed of after sampling.

9. Window Securing

All windows in building 28 that are broken are to be secured with visqueen to prevent future flooding. This operation is to be performed in Level C PPE. Other windows, as directed by the OSC will be sealed with plywood from the exterior of the buildings in Level D PPE.

10. Sulphuric Acid Transfer

When approval is received for recycling of sulphuric acid (H_2SO_4) the following precautions will be taken. ERCS personnel will inspect all hoses and pumps to be used for the transfer. The storage tanker will be suited to carry acid corrosive material (glass lined, stainless steel or equivalent). ERCS SSO will supervise entire transfer to ensure safety. ERCS personnel involved in the transfer will wear Level B PPE.

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11. Material Transfer from Bulking Chambers

While awaiting additional funding for disposal, materials stored in the bulking chambers will be transferred to individual 12K holding pools. The 12K holding pools will be set up inside building 28 on the first floor. Transfer lines, pumps and hoses will be inspected before using. This operation will be performed in level B PPE, under the supervision of the SSO.

12. General Site Safety Conditions

Slipping hazards have developed due to freezing conditions. Extra caution will be taken when walking around site grounds because of the ice and snow. Ladders used to seal windows will be secured prior to use.

13. Ice Removal and Prevention for 12K Holding Pool

The formation of ice on the 12K holding pool may endanger its structural integrity and subsequently lead to an accidental release of its contents. To protect against this situation an aeration pump will be installed which will keep the liquid flowing and prevent it from freezing.

In the event that ice formation does occur, manual removal will be required. Response personnel, donned in level C protection with splash guards, will physically break apart the ice layer. All work will be conducted from outside the pool and personnel will ensure that the existing liner is not damaged in any way during this operation. Additional measures, as defined by the OSC, will be installed to prevent future ice formation.

C. EMPLOYEE TRAINING

All personnel on site who enter the exclusion zone will have completed the required OSHA 40 hour training course and the required 3 days of supervised work.

Each person who enters the exlusion zone will read and sign that he/she has read the site safety plan. Each person will be given an initial site familiarization by the site safety officer.

Additionally, daily safety meetings will be held prior to site activity. These meetings emphasize site hazards, the work being undertaken that day, and any special safety announcements for that day. Personnel are afforded the opportunity to voice concerns at this daily safety meeting. Records of daily safety meetings are maintained in the site safety log.

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D. PERSONAL PROTECTIVE EQUIPMENT

All site personnel will be trained in the proper use of personal protective equipment. The following table illustrates the OSHA standards to be followed for use of personal protective gear:

PROTECTION	REGULATION	SOURCE
General	29 CFR Part 1910.132	41 CFR Part 50-204.7 General Requirements for Personal Protective Equipment.
	29 CFR Part 1910.1000	41 CFR Part 50-204.50, except for Table Z-2, the source of which is American National Standards Institute, Z37 series.
	29 CFR Part 1910.1001-1045	OSHA Rulemaking.
	29 CFR Part 1910.120	Hazardous Waste Operations
Eye and Face	29 CFR Part 1910.133(a)	ANSI Z87.1-1968 Eye and Face Protection
Noise Exposure	29 CFR Part 1910.95	41 CFR Part 50-204.10 and OSHA Rulemaking
Respiratory	29 CFR Part 1910.134	ANSI Z88.2-1969 Standard Practice for Respiratory Protection
Head	29 CFR Part 1910.135	ANSI Z89.1-1969 Safety Requirements for Industrial Head Protection
Foot	29 CFR Part 1910.136	ANSI Z41.1-1967 Men's Safety Toe Footwear
Electrical Protective Devices	29 CFR Part 1910.137	ANSI Z9.4-1968 Ventilation and Safe Practice for Abrasive Blasting Operations

At a minimum, level C personal protection will be used in the exclusion zones.

Level C personal protection will be used where type and concentrations of atmospheric contaminants are known and

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where liquid splashes or other direct contact will not adversely affect any exposed skin and when the criteria for air purifying respirators have been met. Level C protection includes the following at a minimum:

> Tyvek coveralls, tyvek hood, latex gloves, vinyl booties, safety shoes, full-face air-purifying respirators with cartridges approved for organic vapors and equipped with a high effeciency particulate air (HEPA) filter, safety hard hat and all joints taped with duct tape.

Level B personal protection will be used where type and concentrations of atmospheric contaminants are unknown or have been identified but require a high level of respiratory protection. Level B protection includes the following at a minimum:

> Tyvek coveralls, tyvek hood, Saranex outer garment, vinyl booties, latex gloves, PVC or nitrile gloves, safety hard hat, safety shoes, self contained breathing apparatus (SCBA) operating in positive pressure and all joints taped with duct tape.

Personal Protective Equipment Guidelines:

1. All site personnel unable to pass a fit test as a result of facial hair or facial configuration will not enter or work in any exclusion zone.

2. All level D personnel entering any point at or beyond the transition shed will wear hardhats and safety glasses.

3. Respiratory equipment will be used by all site personnel whenever they are in any exclusion zone.

See part G. on PPE for specific site tasks.

E. MEDICAL SURVEILLANCE REQUIREMENTS

All personnel assigned to the site will, at a minimum,be required to undergo a physical examination in accordance with EPA medical monitoring requirements.

Each contractor on site will be responsible for maintenance of their employees' records and will be responsible for medical monitoring of their employees.

Over the course of on-site activities a significant range of weather conditions are expected. In response to this it will be the responsibility of the site health and safety officer

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to ensure that the proper safeguards to protect against heat stress, hypothermia, and frostbite are followed. (see attachments)

F. AIR MONITORING AND PERSONNEL MONITORING

During the progress of drum handling/staging, preparing for and conducting lab packing operations and bulking of drum wastes, the contractor will monitor the quality of air in and around each location. Air sampling will be conducted on a regular basis and additionally as required by special or work related conditions.

Air monitoring instruments will include an explosimeter, organic vapor analyzer (OVA) and a photoionization detector (PID). Air monitoring equipmemt will be operated only by trained personnel.

The contractor will maintain a daily log of the location, time, type, and value of each reading and/or sampling. Copies of daily log sheets will be provided to OSC and may be viewed by site personnel upon request.

If organic vapor levels of unknown chemicals in ambient air exceed three times any background reading, or two times background for any two successive readings, or if the explosimeter indicates over 10% of the lower explosive limit on any single reading, then that work location will be shut down.

Regular background air monitoring will be performed to determine if air leaving the exclusion zone or contamination reduction zone poses a threat to residents or other persons around the site. The action levels for corrective action will be two times background levels.

Personnel monitoring:

Selective monitoring of high risk workers, i.e. those closest to the source of contaminant generation will be conducted. Personal monitoring samples will be collected in the breathing zones of workers to represent their potential inhalation exposure. Pumps will be protected with plastic covering to make facilitate decontamination procedures.

Known Chemical Hazards:

The following is a list of the sixteen identified waste streams on site:

1. base/neutral liquids
2. base/neutral solids
3. acid liquids
4. acid solids
9. oxidizer liquids
10. oxidizer solids
11. organic liquids
12. organic solids

5. cyanide liquids
6. cyanide solids
7. peroxide liquids
8. peroxide solids
13. flammable solids
14. flammable liquids
15. reactive solids
16. halogenated organic liquids

See attachment for additional list of specific compounds which present special hazards.

G. SITE CONTROL MEASURES

1. Site Security

Site security will be provided by the contractor for all personnel entering the site. The names and affiliations of all individuals entering the site will be maintained by the site security.

2. Site Work Zones

To reduce the spread of contamination by workers from the contaminated area, exclusion, contamination reduction and support zones will be delineated and defined as follows:

Exclusion Zone, the contaminated area, is the inside of all buildings on site and where the bulking of wastes is to occur behind building 28. Each building has one access control point which is used for entering and exiting into the exclusion zones. The northwest section of bldg. 28, the location of the freight elevator, will not be considered part of the exclusion zone and will be kept free of debris and contaminants.

Level C protection is the minimum allowable level required by all site personnel entering any exclusion zone. However, level B protection will be required when handling drums of unknown materials and full drums that are in poor condition, during bulking operations, during cleaning of basement in building 25 and during staging of all laboratory chemicals to prepare for lab packing.

The contamination reduction zone (CRZ)is the area where decontamination of personnel and equipment takes place. It is the area within a few feet from the access control points inside the buildings.

The support zone begins at the transition shed which contains supplies of protective gear, first aid kit and sign-in sheets for the exclusion zone. All site personnel may wear work clothes within this zone. A shower trailer, two office trailers and a fire zone are contained in the support zone. Support zone personnel are responsible for alerting the proper agency in the event of an emergency.

H. DECONTAMINATION PROCEDURES

All personnel, equipment and samples leaving any contaminated area on-site must be properly decontaminated by physically removing contaminants by scrubbing or scraping, water rinse or disposal of outer garments and protective coverings.

An emergency shower will be placed in the decontamination areas; the two decontamination showers have been placed just inside bldg. 28 adjacent to the egress area, and outside the egress shed from bldg. 25 (D1).

Emergency decontamination is addressed under Section K-Site Emergency Response Plan.

See attachment for location and description of the measures for level B & C decontamination.

I. SITE STANDARD OPERATING PROCEDURES

As new phases of the removal action at this site occur that have not been previously addressed, an addendum to the site safety plan will be included once approved by the OSC and the Site Safety Officer.

All personnel will be made aware of the following standing orders for this site:

1. No smoking, eating or drinking in the exclusion or contamination reduction zones.

2. No matches, lighters, or any flames of any kind in these zones.

3. Sign in on the exclusion zone entry sheet before entering and sign out upon exiting.

4. Always enter exclusion zone with a buddy.

5. If any signs of radioactivity, explosivity, or unusual conditions are discovered, they should be reported to the site supervisor and site safety officer immediately.

6. No parking in the established fire zone. All cars in the support zone will be parked so as to allow the quickest exit from the site.

7. Communication: The Health and Safety Officer (HSO) will be the responsible individual for determining the proper methods of communication at the site. The HSO shall also be responsible for instructing all participants in the prelimary site entry in the use of the selected communication method(s).

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Each member of the site entry team shall be able to communicate with another entry team member at all times. Communications may be via the following methods:

- SOUND (air horn)
- ELECTRONIC (radio, bull horn)
- VISUAL (hand signals)

** The following standard hand signals shall be mandatory for all employees regardless of other means of communications.

Hand Gripping Throat.....Out Of Air, Can't Breath
Hands On Top Of Head.....Need Assistance
Thumbs Up.....OK, I'm alright, I understand
Thumbs Down.....No, Negative
Gripping Partner's Wrist
Or Gripping Both Hands on
Wrist.....LEAVE AREA IMMEDIATELY!

8. For the purpose of site work, the exclusion zone will consist of inside all site buildings and the bulking area behind building 28. Other exclusion zones will be denoted in the daily site safety meetings and added to the site safety plan as they are delineated.

J. CONFINED SPACE ENTRY

The Arkansas Chemical Facility does not have any areas which can be classified as areas of "confined space entry", as defined under OSHA regulations. However, if any scope of work undertaken at this facility were to include an area defined as a confined space entry, all safety protocol would be followed in accordance with OSHA regulations. (see attachments)

K. SITE EMERGENCY RESPONSE PLAN

1. PRE-EMERGENCY PLANNING

Prior to activities at the Arkansas Chemical Company all appropriate authorities and agencies have been notified as to the nature of work to be performed. The following list details notified parties and their corresponding telephone numbers:

NEWARK FIRE DEPARTMENT.....733-7400
NEWARK POLICE DEPARTMENT.....733-6290
ST. JAMES HOSPITAL.....589-1300
UNIVERSITY OF MEDICINE AND DENTISTRY
OF NEW JERSEY (UMDNJ)
EMERGENCY MEDICAL SERVICE.....456-6290

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The directions to St. James are as follows: From the site make left onto Foundry Street and follow until Raymond Blvd. Turn left onto Raymond Blvd. Follow approximately 1.3 miles to Gulf Station on left. Turn left (sharp turn) onto Market Street. Make an immediate right turn onto Monroe Street. Follow Monroe Street for about three blocks to Lafayette Street. Turn right onto Lafayette and follow three blocks to Congress Street. Turn left onto Congress Street. Emergency room entrance is immediately on left side of Congress Street. (see attachment for map)

2. PERSONNEL ROLES/TRAINING, COMMUNICATIONS, AND AUTHORITY LINE

a. All key personnel, their corresponding role during an emergency, and their place in the chain of custody are listed in section A of the site safety plan.

b. Details of training required by all on-site personnel can be found in section C of the site safety plan.

c. The line of communication required between all on and off site personnel during an emergency is as follows:

* The primary person realizing that a state of emergency exists will immediately notify the command post (CP).
* Upon notification, the CP will contact all emergency response units and other appropriate authorities including the OSC and ERCS Response Manager.

3. EMERGENCY RECOGNITION AND PREVENTION

On a daily basis all personnel on site will attend a briefing prior to any exclusion zone activities. At this meeting discussions shall include the following:

a. Tasks to be performed.
b. Time constraints (i.e., rest breaks, air tank changes).
c. Hazards that may be encountered, including their effects, how to recognize symptoms or monitor them, concentration limits, or other danger signals.
d. Emergency procedures.

Following daily work assignments a debriefing session should be held to review work accomplished and problems observed.

4. SAFE DISTANCES AND PLACES OF REFUGE

Due to the range of chemicals found on site and various other factors (i.e., wind speed, size of release, topography) it is unreasonable to think that any one plan will satisfy the requirements for all potential emergencies. In response to this it is determined that in the event of an emergency all

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personnel shall exit to a "safe" area determined by the nature of the emergency and await instruction from on-site management personnel.

5. SITE SECURITY AND CONTROL

In the event of an emergency it is imperative that the production manager is aware of the location of all personnel and their respective tasks being performed. To aid in the establishment of such a policy, a list of the following factors shall include but not be limited to:

a. Anticipated entry/exit times.
b. Use of "buddy" system.
c. System by which to locate all personnel immediately when necessary.
d. Nature of tasks and area where performed.

6. EVACUATION ROUTES AND PROCEDURES

In the event that a severe emergency occurs and the established entrance/egress routes are cut off, the following routes should be attempted:

a. 1st floor of bldg. 25: double doorway facing bldg. 28
b. 2nd floor of bldg. 25: fire escape at far office on south side of bldg.
c. Bldg. 30: emergency exit door on south side of bldg.
d. 1st floor of bldg. 30A: door at east end of bldg.
e. 2nd floor of bldg. 30A: fire escape on south side of bldg.
f. 1st floor of bldg. 28: door at rear of bldg. 28b or garage door at rear of bldg. 28

7. DECONTAMINATION

In addition to routine decontamination procedures it may be necessary to perform the emergency decontamination of personnel. In the event of such an incident the following factors shall be considered:

* When medical treatment is required to save a life, decontamination should be delayed until victim is stabilized.
* Decontamination should be performed immediately when:

    1. It does not interfere with essential life saving techniques or first aid.
    2. Worker has been contaminated with corrosive or toxic material that could cause further harm.

* When emergency is a heat related illness the protective clothing will be removed as soon as possible to reduce further heat stress.

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8. EMERGENCY MEDICAL TREATMENT AND FIRST AID

As established by section I of the site safety plan, first aid stations and emergency medical phone numbers have been positioned at established points throughout the site. As per Standard Operating Procedures (SOP), any injuries or exposures shall be treated as worst case scenarios until a time that qualified personnel can assess the situation and make the appropriate judgement of the individual situation.

9. EMERGENCY ALERTING AND RESPONSE PROCEDURES

In the event that an emergency situation does occur the following sequence is to be undertaken:

a. Notify personnel and inform them of incident details.
b. Evaluate situation (i.e., what happened, who was involved).
c. Respond to needs of personnel involved (i.e., request aid, extricate, evacuate).
d. Follow up incident by notifying appropriate agencies and plan contingencies for future such incidents.

10. CRITIQUE OF RESPONSE AND FOLLOW-UP

Upon final conclusion of incident the key personnel on site (i.e., OSC, HSO) will investigate and document the incident in an accurate, authentic, and complete manner.

11. PERSONAL PROTECTIVE EQUIPMENT (PPE) AND EMERGENCY EQUIPMENT

During an emergency situation all personnel will, at a minimum, adhere to all existing exclusion zones for degrees of PPE. In addition to this, emergency equipment (i.e., emergency escape packs, SCBAs, first aid kits) has been placed at the main egress points from bldgs. 25 and 28.

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